

Request #: **HUTRR102**  
Title: Human Presence Biometric Detection Kind  
Spec Release: 1.22  
Requester: Sathya Karivaradaswamy  
Company: Microsoft

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Pages Affected: Sensors (0x20)  
Values checked: Matthew Williams (Chair)  
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Current Status: **Approved**  
Priority: Normal  
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Required Voter: Lenovo  
Required Voter: STMicro  
Required Voter: Intel  
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Voting Begins: 26<sup>th</sup> April 2021  
Voting Ends: 3<sup>rd</sup> May 2021  
Voting Result: 3-0-0

#### **Summary:**

New sensor Usages are proposed to be added to the Sensors Page (0x20) that identifies the underlying biometric detection kind for human presence sensors. This is based on the type of technology used by the sensor to determine the presence of humans in the sensor's field of view.

#### **Scenario:**

Presence sensors that detect the presence of humans in the sensor's field of view use diverse and evolving technologies. The new trend in this area includes the use of privacy-sensitive visual and audio sensing technologies. Even though these devices use the visual and audio data for presence detection processing on their firmware (and raw data is not exposed to the Host) these devices may be considered privacy-sensitive by users and for government compliance.

The HID providing a Host with this additional data, allows for configuration of Host settings/features and proactively informing the user about the privacy-sensitive nature of the device.

The biometric categories described below are generalized from U.S. state government requirements (Biometric Information Privacy Act:-

<https://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=3004&ChapterID=57>)

**Proposal:**

Add sensor Usages to allow HIDs to advertise use of biometric data to detect human presence. The Host can then define its own policy for what it considers to be privacy-sensitive.

HIDs can include any multiple of the following Usages to best describe the device (e.g. a sensor may use both Facial and Audio detection). Host policy must take multiple defined Usages into account.

Add to Table 21: Sensors Page

Usage Id	Usage Name	Usage Type
0x31F	<b>Property: Human Presence Detection Type</b>	NArY
0x320-0x3FF	<i>Reserved</i>	
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0x9B7-9BF	<i>Reserved</i>	
0x9C0	Human Presence Detection Type: Vendor-Defined Non-Biometric	Sel
0x9C1	Human Presence Detection Type: Vendor-Defined Biometric	Sel
0x9C2	Human Presence Detection Type: Facial Biometric	Sel
0x9C3	Human Presence Detection Type: Audio Biometric	Sel
0x9C4-0xFFF	<i>Reserved</i>	

Add to Table 21.6 Biometric Sensor Field Usages

Usage Name	Usage Type	Usage Description
Human Presence Detection Type: Vendor-Defined Non-Biometric	Sel	<p>Presence (of one or more people) is detected utilizing a vendor-defined, but non-biometric method.</p> <p>This is used to give positive affirmation that the sensor is using detection unrelated to biometrics as defined below. Without this, a Host <b>cannot</b> assume biometrics aren't utilized by the device.</p>
Human Presence Detection Type: Vendor-Defined Biometric	Sel	<p>Presence (of one or more people) is detected utilizing vendor-defined human biometrics.</p> <p>This is a catch-all for a Human Presence sensor that utilizes biometrics not already defined below.</p>
Human Presence Detection Type: Facial Biometric	Sel	<p>Human presence is detected by scanning (e.g. by a low-resolution video camera) for human faces (e.g. using Viola-Jones object detection). Distinguishing between faces or detection of facial attributes is not performed.</p> <p>Such detection is similar to that of existing digital cameras that can place a bounding-box around a face.</p>
Human Presence Detection Type: Audio Biometric	Sel	<p>Human presence is detected by scanning (e.g. by a microphone) for 'human' sounds (e.g. a predefined keyword, general talking, loud noises, clapping).</p> <p>Distinguishing between voices/users or detection of audio characteristics are not performed.</p>

## Sample Descriptor:

Skeleton human presence sensor that advertises it uses both facial and audio biometrics for presence detection.

```
0x05, 0x20,      // UsagePage(Sensors[32])
0x09, 0x01,      // UsageId(Sensor[1])
0xA1, 0x01,      // Collection(Application)
0x85, 0x01,      //     ReportId(1)
0x09, 0x11,      //     UsageId(Biometric: Human Presence[17])
0xA1, 0x00,      //     Collection(Physical)
0x0A, 0x1F, 0x03, //         UsageId(Property: Human Presence Detection Type[799])
0xA1, 0x02,      //         Collection(Logical)
0x0A, 0xC2, 0x09, //             UsageId(Human Presence Detection Type: Facial
Biometric[2498])
0x15, 0x00,      //             LogicalMinimum(0)
0x25, 0x01,      //             LogicalMaximum(1)
0x95, 0x01,      //             ReportCount(1)
0x75, 0x01,      //             ReportSize(1)
0xB1, 0x03,      //             Feature(Constant, Variable, Absolute)
0x0A, 0xC3, 0x09, //             UsageId(Human Presence Detection Type: Audio
Biometric[2499])
0xB1, 0x03,      //                 Feature(Constant, Variable, Absolute)
0xC0,            //                 EndCollection()
0xC0,            //                 EndCollection()
0x75, 0x06,      //                 ReportSize(6)
0xB1, 0x03,      //                 Feature(Constant, Variable, Absolute)
0xC0,            //                 EndCollection()
```